

Amendments to the Claims:

28. (currently amended) A casting procedure, particularly for engine cylinder heads, comprising steps of:

providing ~~for~~ a mold having open feeding risers for feeding ~~the casting~~ molten metal to the mold as ~~the cooled~~ metal cooling in the mold shrinks and for attracting any slag, fumes and gases contained in the molten metal;

forcing molten metal to flow into the mold from a furnace situated below said mold by exerting a pressure on the surface of said molten metal; and

sealing the top of the mold, at least at the level of the open risers, using a plate which ~~prevent~~ prevents the molten metal introduced under pressure from overflowing and which is connected to a vacuum device for ~~vacuuming~~ removing fumes and gases.

29. (currently amended) A casting procedure in accordance with claim 28, ~~in which the expulsion of the casting from the mold takes place below it~~ further comprising a step of removing a casting from the mold from below.

30. (previously presented) A casting procedure in accordance claim 29, in which at least the upper part of the figure of the casting is obtained using cores.

31. (previously presented) A casting procedure in accordance with claim 29, in which at least the upper part of the figure of the casting is obtained using a metal cope.

32. (currently amended) A casting machine for receiving a mold, where the mold is equipped with a bottom and an ejector plate extending downwards from said bottom, the casting machine comprising

a lower main structure (30) suitable for housing a holding or maintenance furnace (32) for feeding the mold in a low-pressure casting procedure or in a casting procedure according to claim 28,

an upper main structure (31) resting on said lower structure,

a base plate (29) resting on the upper main structure (31),
a cooled plate (16) positioned on the base plate (19) and suitable for receiving the bottom (35) of the mold, and further comprising, underneath the cooled plate (16),
a plate holder (17) to be fastened to the ~~ejectors~~ ejector plate of the mold and running vertically between an inactive lowered position and a raised casting expulsion position.

33. (currently amended) A casting machine according to claim 32, wherein the cooled plate (16) is fitted with an opening (16') for passage of the ~~ejectors~~ ejector plate (38).

34. (currently amended) A casting machine according to claim 33, comprising quick lock means for fastening together the ~~ejectors~~ ejector plate (38) of the mold and the plate holder (17) of the casting machine.

35. (previously presented) A casting machine according to claim 34, in which the mold ejectors plate has a pair of mushrooms (39) and in which the plate holder of the machine is provided with a slide (19) which runs along the plate holder and has slots adapted to receive the mushrooms and to lock them in place following the movement of the slide controlled by a hydraulic cylinder (21).

36. (previously presented) A casting machine according to claim 32, especially for engine cylinders heads, destined to receive a mold with two sides, comprising two sides carriers (1) which are fixed to the corresponding side of the mold and slide along guide columns (5) and sliding gibs (20) fitted to the machine for a movement of the slides by hydraulic cylinders (4).

37. (previously presented) A casting machine according to claim 36, in which the sides are fastened to the sides carriers by automatic quick locking devices.

38. (previously presented) A casting machine according to claim 37, in which every sides carriers has a slide (24) with slots to receive a pair of mushrooms which protrude from the side of the mold and lock them in place following the movement of the slide controlled by a hydraulic cylinder (25).

39. (previously presented) A casting machine according to claim 38, in which the sides carriers (1) are hinged to the sides of the machine, making it possible to rotate then upwards by means of oscillating hydraulic cylinders (7) fitted to the machine to enable easy cleaning and repainting of the figure parts of the sides of the molds.

40. (previously presented) A casting machine according to claim 36, in which at least one side of the mold is made in at least two overlapping parts and in which the related side carrier is made up of at least two corresponding parts, each of which is moved by a hydraulic cylinder (4), said hydraulic cylinder being controllable independently or in parallel.

41. (currently amended) A casting machine comprising
a mold for making castings, especially for engine cylinder heads,
said mold comprising a bottom part and an upper part, wherein said bottom part
has inlets which may be coupled to pipes from a furnace placed beneath the mold and
containing molten metal and
at least one core or metal male having open risers for gravity feeding the molten
metal to the mold as the metal shrinks and for attracting any slag, fumes and gases
contained in the molten metal, and
means for sealing said risers, said means being supported by an arm ~~with a~~
~~tilting arm (8) hinged to the top, destined for the movement of a metal male for~~
~~low-pressure casting or a casting according to claim 28, and/or for the movement of~~
~~sealing means for the upper part of a mold positioned on the machine, depending on~~
~~the casting process used of the machine.~~

42. (previously presented) A casting machine according to claim 41, in which the metal male and/or the sealing means of the upper part of the mold are attached to a hydraulic cylinder (10) carried by the tilting arm for their vertical movement.

43. (currently amended) A casting machine according to claim 41, in which, during the casting process, the tilting arm is closed on the bench and locked to the latter from ~~the opposite side compared with~~ a side opposite the hinged side by a locking device, such as a jack (28').

44. (previously presented) A casting machine according to claim 32, wherein the main lower structure (30) is removable from the upper structure (31) for placing said upper structure on a carrousel or on the ground for a gravity casting procedure.

45. (previously presented) A mold for obtaining castings, especially engine cylinders heads, comprising a bottom (35) and an upper part obtained through cores or a metal male, characterized by the fact that said bottom is provided with inlets (36) for coupling to pipes from a furnace placed underneath the mold and containing the molten metal and by the fact that in said cores or in said metal male open feeding risers are provided for feeding the casting as the cooled metal shrinks and for attracting any slag, fumes and gases contained in the molten metal.

46. (previously presented) A mold according to claim 45, in which the upper part of the figure is obtained by cores, comprising a plate (45) destined to be pressed, during the casting phase, onto the upper surface of the mold to prevent the molten metal from overflowing through the risers.

47. (previously presented) A mold according to claim 46, in which the plate is crossed by channels for the vacuuming of fumes and gases from the mold and is fastened to a support (46) in which there is a vacuum chamber (46") communicating

with an external vacuum device, said plate's vacuum channels being provided with filters to prevent the passage of molten metal.

48. (previously presented) A mold according to claim 45, in which the upper part of the figure is obtained by the metal male (51) and in which the male is fastened to a plate (45') destined to be pressed, during the casting phase, onto the upper surface of the mold to prevent the molten metal from overflowing through the risers.

49. (previously presented) A mold for obtaining castings, especially engine cylinders heads, using a low-pressure casting procedure, where the upper part of the figure is defined by a metal male (52), characterized by the fact that said metal male is crossed by channels (52') for the vacuuming of fumes and gases from the mold and is fastened to a support (46) in which there is a vacuum chamber (46") communicating with an external vacuum device, said metal male's vacuum channels being provided with filters to prevent the passage of molten metal.

50. (previously presented) A mold according to claim 49, in which only the plate or the support with the vacuum chamber are jointed to the hydraulic cylinder (10) carried by the tilting arm (8) on a casting machine for receiving a mold, where the mold is equipped with a bottom and an ejector plate extending downwards from said bottom, the casting machine comprising a lower main structure (30) suitable for housing a holding or maintenance furnace (32) for feeding the mold in a low-pressure casting procedure, an upper main structure (31) resting on said lower structure, a base plate (29) resting on the upper main structure (31), a cooled plate (16) positioned on the base plate (19) and suitable for receiving the bottom (35) of the mold, and further comprising, underneath the cooled plate (16), a plate holder (17) to be fastened to the ejectors plate of the mold and running vertically between an inactive lowered position and a raised casting expulsion position.